

Climatological Data for May, 1910.

DISTRICT No. 4, LAKE REGION.

Prof. HENRY J. COX District Editor.

GENERAL SUMMARY.

The cool weather which prevailed in the district during the last 2 weeks of April continued with only slight interruptions throughout the month. The storm areas affecting the region, as a rule, moved across with their centers well to the south, thus causing a prevalence of northerly winds with the resulting cold weather. In fact, in portions of the district the average temperature was lower than during any previous May, with the exception of that of 1907. Frosts were general during the low temperature periods, but the damage was not serious, as in various sections vegetation susceptible to injury had either been killed by the severe weather during April, or else had reached a sufficiently advanced stage of growth to render it immune to the existing cold. Correspondents in the eastern sections report that apples, pears, plums, etc., were not seriously affected, while strawberries and garden truck, being near the surface, sustained considerable injury. The growth of vegetation was greatly retarded by the low temperature, and the season was exceptionally backward, in strong contrast with the promise held out by the abnormally warm weather of March and early April. Many growing plants still show the scars of the late April frosts, and leafing has been delayed and the growth stunted. In fact, in many sections the early leaves are falling and a second growth is starting and in some instances fruit blossoms are also appearing for the second time, where the first ones were destroyed.

The southerly movement of storm areas, referred to above, was especially noticeable during the first half of the month, and, as a consequence during this period the attending rainfalls were mainly confined to the southern portions of the district. During the remainder of the month, the rains were general and continued, and the drought in the northern and western portions was much relieved and forest fires quenched. The total rainfall for the month exceeded the May average in eastern and southern sections with but few exceptions, while there was a deficiency elsewhere. In the sections referred to the number of rainy days was much greater and the percentage of sunshine much less than the normal for May. The storms were free from destructive winds, and, as a whole, the weather on the Great Lakes was favorable for navigation.

TEMPERATURE.

As stated above, the temperature averaged, throughout the entire district, far below the monthly normal, the largest de-

partures being in the south-central portion. Stations reporting the greatest departures are as follows: Battle Creek, Mich., -7.1° ; Lansing, Mich., -6.4° ; Grand Rapids, Mich., -6.2° ; Bucyrus, Ohio, -6.7° ; Defiance, Ohio, -6.2° . The month was consistently cold throughout, the only noteworthy mild period being toward the close of the second decade and extending into the first part of the third decade. The lowest temperatures in the various sections were as follows: 15° on the 3d at Floodwood and Two Harbors, Minn.; 18° on the 4th at Florence, Wis.; 13° on the 14th at Humboldt, Mich.; 13° on the 15th at Eagle Harbor, Mich.; 18° on the 14th at Luther, Mich.; 27° on the 5th at Auburn, Ind.; 25° on the 6th at Bucyrus and Medina, Ohio; 20° on the 6th at Nahasane, N. Y.; 25° on the 6th at Northfield, Vt. As a rule, the absolute maximum temperatures for the month were not as high as those recorded during March and April, and 80° was not reached or exceeded until the latter part of the month, and then only in the interior of the southern portion. The highest temperature reported at any station was 88° on the 21st at Gaylord, Mich.

PRECIPITATION.

As has been stated above, there was a marked deficiency in the rainfall, especially during the first half of the month, in the upper Lake region, except near the southern end of Lake Michigan. The rainfall in the southern portion of the district was generally somewhat in excess, but the distribution geographically was decidedly irregular, as evidenced by the fact that the greatest monthly fall, 7.07 inches, occurred at St. Joseph on the shore of Lake Michigan, while the smallest rainfall, 0.58 inch, occurred not far distant in the interior at Owosso; again, there was a great deficiency in the Maumee Valley, but a corresponding excess in the Cuyahoga Valley. Aside from the drought in the northwestern sections during the first half of the month, the principal feature was the large number of rainy days during the second half, especially in the eastern sections. At many stations in New York State rain fell on 10 or 12 consecutive days.

FOREST FIRES.

The following note from the official in charge at Duluth is of special interest:

Disastrous and widespread forest fires prevailed from early in the month to about the 16th when they were effectually quenched by the rains that fell between that date and the 19th. The fires caused a great amount of damage, and vast tracts of standing timber were consumed as was also a large amount of logs, ties, and poles. A number of settlers lost their homes.

TABLE 1.—Climatological data for May, 1910. District No. 4, Lake Region.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.				Precipitation, in inches.				Sky.	Prevailing wind direction.	Observers.						
				Mean.	Departure from the normal.	Highest.	Date.	Total.	Departure from the normal.	Greatest in 24 hours.	Total unadjusted.	Number of rainy days, .01 inch or more.	Number of partly cloudy days, .01 inch or more.	Number of cloudy days.						
Minnesota.																				
Cloquet	Carlton	892	1																	
Duluth	St. Louis	1,133	39	46.8	-1.2	74	27	28	3	30	1.18	-2.16	0.54	T.	9	9	12	10	ne.	
Floodwood	do	1,257	6	49.2		76 ^b	57	15 ^b	3	57 ^b	1.86	-2.47	0.75	T.	0	7	21 ^b	8 ^b	nw.	
Mount Iron	do	1,510	16	48.0	-2.5	72	27	19	2	43	1.41	-2.47	0.66	T.	4	11	12	8	nw.	
Stephens Mine	do	1,500	3	46.2		75	27	18	3	45	2.17	-2.47	0.63	T.	10	16	9	6	n.	
Two Harbors	Lake	614	16	46.6	-0.8	73	8	23	3	40	1.30	-2.21	0.50	T.	0	5	9	10	12	ne.
Wisconsin.																				
Appleton	Outagamie	795	11	54.4	0.0	77	19	29	4	39	2.31	-1.14	1.19	T.	9	19	8	4	se.	
Ashland	Ashland	647	16	49.4	-1.2	78	27	22	3	42	2.76	+0.07	1.95	T.	5	15	10	6	ne.	
Cecil	Shawano	804	3	50.9		78	20 ^b	24	4	47	4.51	-2.42	0.76	T.	0	6	12	3	sw.	
Chilton	Calumet	860	16	51.4	-4.7	76	19 ^b	26	14	42	1.54	-2.42	0.45	T.	7	10	20	1	nw.	
Forest	Forest	1,060	15	48.2	-4.5	70	81	19	5	39	0.86	-1.53	0.78	T.	3	19	4	3	nw.	
Florence	Florence	1,283	19	47.8	-3.3	78	19 ^b	18	4	50	0.67	-2.82	0.92	T.	0	3	19	3	nw.	
Fond du Lac	Fond du Lac	800	24	52.0	-4.1	76	25	14	37	1.26	-1.93	0.31	T.	6	17	3	11	ne.		
Grand River Locks	Marquette	616	14	53.2		78	19 ^b	28	3	35	2.38	-2.57	1.80	T.	0	5	21	1	nw.	
Green Bay	Brown	617	24	51.6	-2.9	77	19	31	14	30	1.86	-1.71	0.69	T.	10	6	12	13	ne.	
Herbster	Bayfield	700	2																	
Iron River	do	1,096	1	49.6		75	27	23	4	38	2.08	-1.27	0.0	T.	9	15	11	5	nw.	
Keweenaw	Keweenaw	590	1	47.8		75	19	30	4	33	1.57	-1.04	0.45	T.	0	8	17	4	10	s.
Manitowoc	Manitowoc	610	59	48.9	-2.7	74	10	29	14	40	1.54	-1.37	1.12	T.	0	7	22	4	5	ne.
Menasha	Winnebago	764	13																	
Menominee Falls	Waukesha	842	1	51.4		76	19 ^b	28	4	35	3.95	-1.79	0.93	T.	0	10	13	7	11	se.
Milwaukee	Milwaukee	681	40	50.6	-3.0	76	19	34	3	26	2.64	-0.78	0.47	T.	10	12	8	11	n.	
New London	Outagamie	762	14	52.8	-3.2	76	19 ^b	28	14	35	1.63	-2.29	1.00	T.	0	6	17	4	10	nw.
Oconto	Oconto	590	19	50.6	-3.5	76	19	26	4	36	1.93	-1.70	1.03	T.	0	6	16	5	s.	
Oshkosh	Winnebago	744	21	52.6 ^b	-4.1	79 ^b	19	27	3	37 ^b	1.49	-2.33	0.76	T.	0	4	17	13	1	sw.
Pine River	Waushara	906	15	52.7	-4.0	78	19	27	3	37	1.16	-2.94	0.53	T.	7	6	19	6	se.	
Plum Island	Door	588	2	46.5		67	18 ^b	28	5	57	1.95	-0.75	0.75	T.	0	8	10	7	14	s.
Port Washington	Ozaukee	713	17	49.3	-3.5	75	19	29	4	36	2.03	-1.65	0.66	T.	0	7	7	10	14	se.
Racine	Racine	633	13	50.4	-4.7	79	18	31	5	33	3.18	+0.35	1.03	T.	0	10	10	10	11	ne.
Sheboygan	Sheboygan	831	12	49.1	-3.2	75	19	31	4	29	1.59	-1.84	0.70	T.	0	8	7	16	8	ne.
Sturgeon Bay	Door	600	12	48.9	-1.7	71	18	23	14	34	2.40	-0.77	0.0	T.	0	10	17	8	6	se.
Superior	Douglas	671	1	46.8		71	27	30	3	34	1.08	-0.65	0.0	T.	6	18	6	7	ne.	
Waupaca	Waupaca	857	14	51.9	-4.7	80	20 ^b	25	4	49	1.18	-3.09	0.85	T.	0	5	10	10	11	w.
Illinois.																				
Chicago	Cook	824	40	53.4	-3.1	78	22	38	3	29	4.67	+1.30	1.34	T.	0	13	8	13	10	ne.
Indiana.																				
Auburn	DeKalb	874	14	53.3	-5.2	81	22	27	5	41	2.05	-1.66	0.64	T.	11	14	2	15	ne.	
Berne	Adams	849	2	55.4		80	22	30	5	39	4.23	-0.93	0.0	T.	12	10	9	9	nw.	
Elkhart	Elkhart	801	8																	
Fort Wayne	Allen	775	14	56.4	-3.8	85	22	30	5	40	2.90	-0.78	0.60	T.	11	12	7	12	nw.	
Hammond	Lake	598	19	54.6	-3.5	79	21 ^b	33	14	36	5.42	+1.38	1.90	T.	0	8	9	12	n.	
Howe	Lagrange	886	5	49.4		84 ^b	21 ^b	30 ^b	14	35	3.35	-0.85	0.85	T.	0	9	12	4	15	n.
South Bend	St. Joseph	726	17	54.0	-5.6	80	22	31	14	34	4.33	+0.53	1.20	T.	0	12	16	2	13	s.
Whiting	Lake	636	17	56.3		82	22	37	14	33	5.38	-1.65	0.0	T.	8	16	6	9	ne.	
Michigan—Upper Peninsula.																				
Baraga	Baraga	623	8	48.6		80	28	29 ^b	14	40				T.	15	0	11	n.		
Bergland	Ontonagon	1,300	47.2			80	19	16	4	48	3.08	-1.37	0.0	T.	9	16	1	14	ne.	
Blaney	Schoolcraft	3				70	8							T.	11	13	7	7		
Calumet	Houghton	1,246	22	46.3	+0.4	71	27	28	14	30	3.57	+0.34	1.63	T.	8	17	7	7	n.	
Chatham	Alger	875	9	44.3		73	19	15	14	45	2.32	-0.75	0.75	T.	11	9	11	11	nw.	
Deer Park	Luce	610	9	45.1		75	28	25	3	38	2.20	-0.45	0.45	T.	7	10	5	16	nw.	
Detour	Chippewa	585	9	46.4		75	28	28	6	38	2.55	-1.15	0.0	T.	7	16	0	15	n.	
Eagle Harbor	Keweenaw	622	11	44.2	-1.5	70	28	13	15	34	2.26	-1.23	1.23	T.	6	11	12	8	w.	
Escanaba	Delta	612	37	46.1	-3.9	66	18	26	14	26	1.60	-1.82	1.04	T.	0	11	7	8	s.	
Ewen	Ontonagon	1,147	9	46.4		79	19	15	31	46	2.43	-1.22	0.0	T.	0	9	15	14	12	nw.
Grand Marais	Alger	610	9	42.9		64	26	27	14	24	1.42	-0.30	0.30	T.	9	14	2	15	nw.	
Houghton	Humboldt	668	9	47.0	-2.2	73	27	23	14	33	3.60	+0.40	2.16	T.	13	10	12	9	nw.	
Marquette	Marquette	1,536	13	46.0	-1.2	83	23	13	14	54				T.	0	10	3	18	w.	
Iron Mountain	Dickinson	1,111	9	50.3 ^b		78 ^b	19	23 ^b	4	39 ^b				T.	10	13	11	6 ^a	nw.	
Iron River	Iron	1,504	13	47.1		78	19	16	4	50	4.26	-1.86	1.86	T.	8	11	15	5	5	nw.
Ironwood	Gogebic	1,520	7	47.9		75	19 ^b	24	3	36	2.01	-1.50	1.50	T.	0	5	8	9	4	nw.
Ispempen	Marquette	1,536	10	46.8	-2.6	77	27	20 ^b	14	45 ^b	2.31	-1.79	0.70	T.	0	3	8	15	8	se.
Isle Royale	Keweenaw	610	3	43.0		55	6	32	21	21	1.24	-0.80	0.0	T.	4	12	4	15	se.	
Mackinac Island	Mackinac	831	10			71	19	17	14	40	2.38	-1.08	0.0	T.	7	18	1	12	n.	
Maple Ridge	Delta	4	45.2			71	19	17	14	40	2.38	-1.08	0.0	T.	0	7	14	10	10	w.
Marquette	Marquette	734	39	48.9	-2.1	78	27	39	4	36	2.55	-0.77	0.94	T.	10	7	14	10	10	se.
Menominee	Menominee	581	11	49.8	-0.6	76	19	28	5	30	1.79	-1.29	0.91	T.	0	4	19	5	7	nw.
Menominee	Luce	773	8	45.6		74	27	19	13	48				T.	17	7	7	7	7	nw.
Powers	Menominee	868	11											T.	0	17	4	17	17	nw.
St. Ignace	Mackinac	593	20	48.1	-0.6	77	22	32 ^b	1	32	2.63	-0.37	0.80	T.	9	10	4	17	nw.	
Sault Ste. Marie	Chippewa	614	22	45.6	-2.1	74	26	31	14	37	3.03	+0.38	1.13	T.	9	11	5	13	nw.	
Thomaston	Gogebic	1,347	13	46.4	-4.4	77	19	15	13	48	1.54	-1.22								

MONTHLY WEATHER REVIEW.

MAY, 1910

TABLE 1.—Climatological data for May, 1910. District No. 4—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.				Precipitation, in inches.				Sky.	Pervailing wind direction.	Observers.						
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Michigan—Lower Peninsula—Cont'd.																				
Cheboygan.	Cheboygan.	611	20	47.2	-3.4	76	26	26	5	38	2.88	-0.09	0.90	0.0	8	9	18	4	nw.	
Clinton.	Lenawee.	830	20	53.7	-4.4	84	21	27	5†	41	3.11	-1.02	1.08	0.0	9	13	14	4	nw.	
Coldwater.	Branch.	934	13	54.6*	-4.3	82	21	28*	14	37†	3.36	-0.75	1.00	0.0	11	17†	5†	8	nw.	
Concord.	Jackson.	5	53.4			83	21	28	14	38†	3.60		1.05	0.0	8	14	14	3	nw.	
Croton.	Newago.	685	2	52.4		77	21	27	14	37	2.84		0.55	0.0	10	4	22	5	nw.	
Detroit.	Wayne.	730	39	53.8	-4.1	76	22	34	31	24	3.65	+0.38	1.31	T.	13	7	18	6	n.	
Durand.	Shiawassee.	799	3	51.4*		79*	28	29*	14	37	3.83		1.32	T.	9†	15	9†	6*	sw.	
East Tawas.	Iosco.	590	13	49.6	-2.6	77	21	28	5†	31	2.88	+0.48	0.70	0.0	7	23	9	2	sw.	
Eloise.	Wayne.	840	13	54.4	-2.8	80	21†	29	14†	36	3.45	+0.88	1.25	T.	11	15	7	7	sw.	
Flint.	Genesee.	730	21	54.6*	-1.3	78*	19†	29	14	34*	3.83	+0.17	1.25	T.	9	11	12	8	n.	
Frankfort.	Benzie.	589	6	47.2		68	8	30	5†	25	2.76		0.90	0.0	5	12	14	0	13	
Ganges.	Allegan.	665	1	50.8		78	21	32	13†	31	6.31		2.66	0.0	12	14	2	11	nw.	
Gaylord.	Otsego.	1,367	5	49.0		88	21	28	31	39	2.25		1.07	T.	4	17	0	14	nw.	
Gladwin.	Gladwin.	794	14	52.2	-2.7	82	21	27	15	45	2.25	-0.82	1.10	0.0	7	24	1	6	nw.	
Grand Haven.	Ottawa.	628	29	49.3	-5.5	73	21	31	14	30	4.50	+1.16	1.25	0.0	12	12	9	10	nw.	
Grand Rapids.	Kent.	707	21	52.8	-6.2	80	21	33	14	52	3.88	+0.54	1.04	0.0	12	8	11	12	nw.	
Grape.	Monroe.	625	20	54.7*	-3.4	84	22	29	14	38	3.30	-0.15	1.16	0.0	9	7†	12	7	w.	
Grass Lake.	Jackson.	989	4	52.5		81	21	28	14	33	4.18		1.20	0.0	10	0	0	12	nw.	
Grayling.	Crawford.	1,147	21	49.5	-2.3	72	23†	28	12	30	1.70	-1.23	0.70	0.0	6	21	4	5	ne.	
Harbor Beach.	Huron.	635	22	49.5		77	20†	25	14	37	2.50	-0.64	0.48		7	16	5	16	nw.	
Harrison.	Clare.	1,159	17	51.7	-2.0	77	20†	28	14	31	2.50	-1.14	0.61	0.0	5	12	12	7	sw.	
Harrisville.	Alcona.	616	26	47.9	-2.5	76	29	29	5†	31	2.16	-0.85	1.12	0.0	4	16	6	9	nw.	
Hart.	Oceana.	698	18	52.9	-1.8	82	18	26	13	41	2.15	-1.15	0.45	T.	9	9	16	6	nw.	
Hayes.	Huron.	620	20	48.8*	-5.8	78*	21†	30	13	36	2.16		3.82	+0.16	1.19	T.	9	7	7	w.
Highbank.	Oakland.	830	18								3.35	-0.55	1.16	0.0	8	11	7	13	w.	
Hillsdale.	Hillsdale.	1,150	13	53.0	-4.4	81	21	28	5†	35	3.35	-0.55	1.16	0.0	12	6	21	4	nw.	
Holland.	Ottawa.	610	4	50.5		79	21	27	14	32	4.43		1.25	0.0	12	10	12	4	nw.	
Howell.	Livingston.	924	18	51.2*		80	21†	26	14	37	3.90*		1.30	0.0	9†	11	8†	7	nw.	
Ivan.	Kalkaska.	21		47.7	-5.3	78	28	19	14	45	1.82	-1.15	0.45	T.	0	0	16	6	nw.	
Jackson.	Jackson.	927	13								2.21	-1.13	0.65	0.0	11	11	12	8	ne.	
Jeddo.	St. Clair.	667	21	51.1	-3.6	80	20	29	14	40	4.00	-0.16	1.16	0.0	11	15	9	7	w.	
Kalamazoo.	Kalamazoo.	955	34	53.4	-4.8	79	20	33	5†	28	5.44	+1.39	1.30	0.0	10	15	9	10	nw.	
Lansing.	Ingham.	881	23	52.6	-4.7	80	21	28	14	32	4.06	+0.50	1.15	T.	10	12	10	9	Michigan Home.	
Lapeer.	Lapeer.	827	11	52.4	-3.7	80	28	30	14	56	3.54	+0.55	1.13	T.	8	0	26	5	sw.	
Ludington.	Mason.	586	12	47.3*		68*	7†	28	5†	33	1.94*		1.37	0.0	17	3	6	n.*	John Giddings.	
Luther.	Lake.	1,028	20	49.0		78	22	18	14	44	2.48		0.64	0.0	10	14	10	7	Michigan Central R. R.	
Mackinaw.	Cheboygan.	592	14	48.0	-0.9	73	28	26	5	34	3.19	-0.37	1.45	0.0	5	20	0	11	Do.	
Mancelona.	Antrim.	1,121	14	47.8	-4.8	79	28	21	5	44	0.92	-1.34	0.30	T.	6	23	1	7	Pere Marquette R. R.	
Manistee.	Manistee.	600	13								2.10	-0.79	0.87	0.0	6	10	7	5	nw.	
Midland.	Midland.	604	11								1.20		0.0	6	13*	10*	7	sw.	Gerard A. Whitbeck.	
Montague.	Muskegon.	660	7	49.3*		78*	21	28	5†	32	3.18		1.20	0.0	10	14	9	10	George J. Tripp.	
Morenci.	Lenawee.	811	3	54.0		80	21†	29	15†	35	2.38		0.87	0.0	9	12	9	10	Herman Orbits.	
Mount Clemens.	Macomb.	615	10	50.0	-5.8	90	19	20	5	53	3.35	+0.71	1.05	0.0	10	7	16	8	Pere Marquette R. R.	
Mount Pleasant.	Isabella.	826	11	52.8	-4.0	80	20	25	14	45	3.16	+0.49	0.94	0.0	7	22	1	8	Grand Rapids & Ind. Ry.	
Muskegon.	Muskegon.	587	14	50.6	-5.1	72	19	30	14	24	2.63	-1.46	0.60	0.0	7	18	4	9	Grand Rapids & Ind. Ry.	
Old Mission.	Grand Traverse.	848	16	49.2	-4.0	72	28	29	4	38	2.43	-0.58	0.52	0.0	10	21	4	4	E. O. Ladd.	
Olivet.	Eaton.	934	20	51.6	-5.0	78	21	30	14	29	5.17	+1.11	1.41	0.0	10	18	3	10	Prof. G. A. Knapp.	
Omer.	Arenac.	616	11	51.6	-1.1	78	19†	27	16	41	3.02	+0.56	0.82	0.0	4	9	11	11	Detroit & Mackinac Ry.	
Onaway.	Presque Isle.	826	7	49.4		71	9†	25	4†	42	1.42		0.64	0.0	5	8	8	18	Do.	
Ovid.	Clinton.	780	20	53.6	-6.5	84	22	26	14	40	4.37	+0.95	1.43	0.0	9	16	1	14	Geo. F. Faxon.	
Owosso.	Shiawassee.	731	13	52.6	-6.7	80	21	28	3	35	0.58	-2.38	0.22	T.	9	7	19	5	Owosso Sugar Co.	
Petoskey.	Emmet.	660	20								1.20		0.0	6	16	9	6	Postmaster.		
Plymouth.	Wayne.	725	13	54.0	-3.7	82	19†	29	14†	41	4.02	+1.11	1.95	0.0	5	10	12	9	Grand Rapids & Ind. Ry.	
Pontiac.	Oakland.	935	10	53.2	-3.5	79	21†	30	14	37	3.56	-0.15	0.90	0.0	11	19	6	6	Pere Marquette R. R.	
Port Austin.	Huron.	618	14								3.56		0.82	0.0	11	9	9	13	Do.	
Port Huron.	St. Clair.	639	35	50.6	-3.1	78	22	32	12	33	2.96	-0.28	0.82	0.0	11	9	9	13	U. S. Weather Bureau.	
Reed City.	Osceola.	1,033	14								1.20		0.82	0.0	11	9	9	13	Pere Marquette R. R.	
Rosecommon.	Rosecommon.	1,141	6								1.20		0.82	0.0	8	18	5	5	William Marsh.	
Saginaw.	Saginaw.	601	8	54.8		83	23	31	14	33	4.30		1.20	T.	9	5	18	8	Postmaster.	
Saginaw, W. S.	Saginaw, W. S.	601	15	53.1	-5.0	80	21	29	14	37	3.03	+0.86	1.45	T.	11	19	0	12	Rev. N. Wilhelm.	
St. James.	Charlevoix.	681	4	48.4		75	15†	20	2	41	2.63		0.70	0.0	7	12	8	11	City of St. Johns.	
St. Johns.	Clinton.	779	17								1.20		0.82	0.0	10	10	5	16	City of St. Joseph.	
St. Joseph.	Berrien.	593	23	52.4	-4.9	79	28	35	12	32	7.07	+3.17	2.00	0.0	10	10	5	16	Pere Marquette R. R.	
Sandusky.	Sanilac.	790	1	51.4		78	19	28	5†	42	1.58		1.58	T.	8	10	14	7	City of St. Joseph.	
Saranac.	Ionia.	639	15	52.2	-3.3	81	21	26	14	42	4.29	+1.10	1.17	0.0	10	12	3	16	Pere Marquette R. R.	
South Haven.	Van Buren.	585	14								0.0		0.0	0.0	0	10	6	5	John Wellington.	
Stanton.	Montcalm.	880	17	51.2*	-5.1	79	21†	20	5	45	3.71		0.0	0.0	0	10	4	4	Mrs. M. E. De Diemar.	
Thornville.	Lapeer.	975	33	51.4	-7.0	73	22†	24	14	33	4.08	+0.63	0.90	T.	9	12	12	7	City of Stanton.	
Traverse City.	Grand Traverse.	588	13	50.3	-1.7	84	24	30	4	39	3.65	-0.37	0.87	0.0	10	8	11	12	Dr. J. S. Caulkins.	
Vassar.	Tuscola.	641	9	52.6*		79*	21	27	14	36	0.90*		0.38*	0.0*	4	6*	16*	8*	Pere Marquette R. R.	

TABLE 1.—Climatological data for May, 1910. District No. 4—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmeted.	Number of rainy days, .01 inch or more.	Number of partly cloudy days.	Number of cloudy days.			
<i>Ohio—Cont'd.</i>																				
Oberlin.	Lorain.	855	35	55.1	— 3.7	81	2	27	6	40	3.22	— 0.34	0.64	0.0	12	0	7	24	n.	
Ottawa.	Putnam.	720	18	55.1	— 5.0	80	21	30	5†	36	2.12	— 1.48	0.72	0.0	8	0	14	17	w.	
Rome.	Ashland.	894	3																G. H. Crosby.	
Sandusky.	Erie.	629	33	55.8	— 3.4	78	19	38	15	29	1.89	— 1.36	0.45	0.0	14	8	11	12	w.	
Tiffin.	Seneca.	775	28	55.9	— 4.3	80	21	32	6	29	2.88	— 0.85	0.58	0.0	13	8	16	7	w.	
Toledo (1).	Lucas.	769	39	55.4	— 4.3	81	22	34	14	25	2.97	— 0.30	0.81	0.0	13	13	13	5	sw.	
Toledo (2)†.	do.	606	6	55.3		80	22	32	14	28	2.87		0.69	0.0	14	18	8	7	n.	
Upper Sandusky.	Wyandot.	854	27	56.4	— 4.2	80	1	29	5	34	3.41	— 0.55	1.00	0.0	8	10	15	6	sw.	
Vickery.	Sandusky.	588	17	55.5	— 4.1	84	21	29	6†	42	2.16	— 1.35	0.40	0.0	12	7	14	10	n.	
Wauseon.	Fulton.	780	38	54.3	— 4.6	82	21	28	5	39	2.68	— 1.45	0.82	0.0	14	10	13	8	sw.	
Wellington.	Lorain.	856	16	55.6	— 4.6	81*	2†	28*	6	41*	3.63	— 0.37	1.00	0.0	19	12	3	16	sw.	
Willoughby.	Lake.	649	16								3.17	— 0.56	0.79	0.0	12	6	11	14	n.	
<i>Pennsylvania.</i>																				
Erie.	Erie.	713	37	53.8	— 3.5	81	23	37	6	33	3.46	+ 0.03	0.84	0.6	17	8	9	14	w.	
<i>New York.</i>																		U.S. Weather Bureau.		
Adams Center.	Jefferson.	540	19	53.9	— 0.1	78	22†	30	6	30	4.39	+ 0.94	1.30	T.	19	8	11	12	n.	
Angelica.	Allegany.	1,340	27	51.4	— 3.4	79	29	24	6	43	3.12	— 0.66	0.87	T.	20	1	10	20	nw.	
Appleton.	Niagara.	270	19	52.8	— 2.1	80	23	35	4†	34	2.80	— 0.10	0.85	0.0	11	8	14	14	n.	
Auburn.	Cayuga.	715	41	53.6	— 3.1	80	28	29	13	32	4.88	+ 1.41	1.05	0.0	11	17	10	4	n.	
Avon.	Livingston.	585	15	57.6	+ 0.2	78	22	32	5†	33	3.20	+ 0.56	0.85	0.0	12	10	11	10	
Benson Mines.	St. Lawrence.	2																		
Blue Mountain Lake.	Hamilton.	1,750	10								6.28	+ 1.72	1.35	1.0	10	12	8	11	w.	
Brockport.	Monroe.	537	14	54.6	— 1.6	83	20†	33	5	39	3.37	+ 0.38	1.47	0.0	15	10	12	9	w.	
Buffalo.	Erie.	767	59	52.3	— 2.2	79	22	35	12	27	2.87	— 0.23	1.06	0.0	17	8	7	16	sw.	
Canton.	St. Lawrence.	448	16	52.8	— 3.4	77	28	30	6	34	3.61	+ 0.76	1.15	0.0	16	8	12	11	sw.	
Cape Vincent.	Jefferson.	246	5	50.8		78	20	33	14	32	3.61		1.07	0.0	10	7	14	10	sw.	
Carvers Falls.	Washington.	243	12	55.2	+ 0.1	80	24	29	6	41	3.88	+ 1.15	0.98	0.0	9	18	6	7	s.	
Chazy.	Clinton.	151	10	55.3	+ 0.5	78	24†	31	5	36	3.87	+ 0.89	1.50	0.0	7	16	2	13	n.	
Danemora.	Clinton.	1,490	5	52.5		75	29	29	5	33	5.16		1.45	T.	16	7	12	12	w.	
Elba.	Genesee.	500	11	52.0	— 3.1	79	23	29	5	34	3.96	+ 0.85	1.50	0.0	10	14	8	9	sw.	
Fayetteville.	Onondaga.	530	9	55.3		80	21	26	13	42	3.84	+ 0.84	1.16	0.0	12	10	9	12	nw.	
Gabriels.	Franklin.	1,729	8	50.2		79	20	23	6	50	4.73		1.30	T.	16	8	9	14	nw.	
Harkness.	Clinton.	622	8	53.6		80	24	31	5	37	3.81		1.57	0.0	13	23	2	6	w.	
Hemlock Lake.	Livingston.	900	12	53.0	— 3.5	75	29	31	13	28				0.0	10	8	15	nw.		
Hunt.	do.	1,321	11	54.8	— 1.8	78	19†	27	13	43	3.67	+ 0.01	0.82	0.0	12	8	17	6	sw.	
Ithaca.	Tompkins.	928	32	54.2	— 2.8	80	29	32	16	38	4.20	+ 0.77	1.38	0.0	17	9	15	15	nw.	
Keene Valley.	Essex.	1,000	10	52.3	— 1.2	80	20	25	5	48	2.97	+ 0.21	0.96	0.5	11	11	6	14	s.	
King Ferry.	Cayuga.	13									4.01	+ 1.08	0.72	0.0	12	10	11	10	nw.	
Lake George.	Warren.	350	13	55.6	— 0.2	86	24	31	6	39	5.04	+ 2.02	1.27	0.0	11	3	20	8	s.	
Lake Placid Club.	Essex.	1,364	2	46.5		71	17	21	6	42	4.47		1.82	5.2	14	7	15	9	sw.	
Le Roy.	Genesee.	920	20	53.8	— 3.4	78	20	33	5†	35	3.19	— 0.10	0.96	T.	17	9	5	17	sw.	
Lockport.	Niagara.	650	23	52.8	— 4.1	80	23	31	5	31	2.83	+ 0.08	0.55	0.0	16	8	4	19	sw.	
Lowville.	Lewis.	900	43	51.4	— 3.0	80	29	28	16	43	3.47	+ 0.58	1.28	0.0	5	13	9	9	w.	
Lyndonville.	Orleans.	14									2.41		0.04	0.02	0.0	11	17	4	10	sw.
Moirs.	Franklin.	200	10	54.4	— 0.6	78	17	30	5	33	4.81	+ 1.68	1.03	0.0	12	7	8	16	w.	
Nehasane.	Hamilton.	1,750	2	49.1		78	20	20	6	48	5.43		1.51	0.0	14	11	6	14	e.	
North Lake.	Herkimer.	1,922	9	51.8	+ 0.6	75	19	25	11	43	8.07	+ 1.65	1.43	0.0	8	13	10	8	nw.	
Ogdensburg.	St. Lawrence.	175	26	54.4	— 2.1	78	28	34	12	31	2.98	+ 0.09	0.79	0.0	14	6	17	8	w.	
Old Forge.	Herkimer.	1,733	2	52.6		80	20†	21	6	40	6.51		1.64	0.0	15	7	18	18	w.	
Oswego.	Oswego.	335	40	51.3	— 3.4	77	20	37	12	31	3.57	+ 1.72	1.08	0.0	13	10	7	14	
Otto.	Cattaraugus.	1,410	51	52.4		75	2†	29	13	36	3.44		1.00	0.0	17	12	9	10	
Palermo.	Oswego.	460	51								4.78	+ 2.09	2.01	0.0	13	11	8	12	se.	
Perry City.	Schuyler.	1,038	30	53.3	— 2.5	80	29	28	16	43	5.03	+ 1.79	1.64	0.0	15	9	11	11	nw.	
Philadelphia.	Jefferson.	485	4	53.4		79	21	32	6†	38	4.11		1.39	0.0	12	3	20	8	w.	
Plattsburgh.	Clinton.	170	60	54.7	— 0.2	80	24	34	5†	31	4.85	+ 2.27	1.50	0.0	12	7	17	7	sw.	
Potsdam.	St. Lawrence.	300	34	54.0	— 1.1	78	28†	27	15	36	3.31	+ 0.15	1.38	0.0	12	7	5	19	sw.	
Raquette Lake.	Hamilton.	2	51.2			74	28	29	6	36	5.93		1.68	0.0	15	7	6	18	sw.	
Rochester.	Monroe.	523	81	54.0	— 2.7	80	20	34	5	28	2.75	— 0.19	0.88	0.0	18	9	7	15	w.	
Romulus.	Seneca.	719	14	54.7	— 3.3	78	20†	31	14	33	4.90	+ 1.39	1.78	0.0	11	6	10	15	nw.	
Shortsville.	Ontario.	740	11	53.6	— 2.5	79	20	32	13†	34	3.18	+ 0.51	0.77	0.0	16	10	12	9	w.	
Skaneateles.	Onondaga.	15									5.48	+ 1.99	0.95	0.0	16					
Syracuse.	do.	597	8	53.7	— 3.6	77	22	34	13	31	4.76	+ 1.37	1.48	T.	15	6	8	17	w.	
Tioga.	Essex.	344	12	52.5	— 4.2	79	29	38	8	34	5.20	+ 2.19	2.00	0.0	11	20	6	5	n.	
Trudeau.	do.	1,620	17																	
Tupper Lake.	Franklin.	1,652	10																	
Vulvia.	Chautauqua.	1,167	11	53.7	— 1.6	80	21†	28	13	32	2.78	— 0.60	0.86	0.0	14	7	16	8	w.	
Watertown.	Jefferson.	737	17	53.8	— 3.6	83	20	28	6	43	4.60	+ 0.96	1.25	0.0	11	8	11	12	n.	
Wedgwood.	Schuyler.	1,430	21	52.8	— 3.1	77	21	30	14	29	4.31	+ 0.54	0.72	0.0	19	12	12	7	sw.	
Westfield.	Chautauqua.	837	14	53.1	— 3.7	79	23	31	5†	35	4.61	+ 0.84	0.76	0.0	18	5	26	0	sw.	
Youngstown.	Niagara.	8									2.11		0.80	0.0	11	5	26	0	sw.	
Burlington.	Chittenden.	404	3	53.2	— 0.7	79	24	30	6	38	3.42	+ 0.59	1.18		13	2	14	1		

TABLE 2.—*Daily precipitation for May, 1910. District No. 4, Lake Region.*

TABLE 2.—*Daily precipitation for May, 1910. District No. 4—Continued.*

Stations.	River basins.	Day of month.																																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.	
<i>Michigan—Lower Peninsula—Cont'd.</i>																																		
East Tawas.	Lake.	.50																																2.88
Eloise.	Rouge.	.46	1.25																														3.45	
Flint.	Saginaw.	.30	.12	1.25																													3.83	
Frankfort.	Betsie.																																2.76	
Ganges.	Lake.	27	1.32	.03																												6.31		
Gaylord.	Cheboygan.																																2.25	
Gladwin.	Saginaw.	.60																															2.25	
Grand Haven.	Grand.	.01	.93																														4.50	
Grand Rapids.	do.	.05	.95																														3.88	
Grape.	Raisin.	22	1.16																														3.30	
Gran Lake.	Grand.	.60	1.20																														4.18	
Grayling.	Au Sable.																																	
Harbor Beach.	Lake.	.70																															1.70	
Harrison.	Saginaw.																																	
Harrisville.	Lake.	.38																															2.50	
Hart.	Pentwater.	.23																															2.15	
Hayes.	Pigeon.	1.12																															2.16	
Higdale.	Huron.	.90	1.19																														3.82	
Hilldale.	Saint Joseph.	.66	1.16																														3.35	
Holland.	Lake.	11	1.04	.02																													4.43	
Howell.	Saginaw.	.50	1.30																														3.00	
Ivan.	Manistee.	.05																															1.82	
Jackson.	Grand.																																	
Juddo.	St. Clair.	.12	.65																														2.21	
Kalamazoo.	Kalamazoo.	.73	.97																														5.44	
Lansing.	Grand.	48	1.15	.02																												4.06		
Leicester.	Saginaw.	1.13	.07	1.00																												3.54		
Ludington.	Pere Marquette.	.05																															1.04	
Luther.	Manistee.	.18																															2.48	
Mackinaw.	Lake.	.80																															3.19	
Mancelona.	do.	.02																															0.92	
Midland.	Manistee.	.04																															2.10	
Saginaw.	Montague.	.32																															3.18	
Morenci.	Maumee.	.27	.87	.01																													2.38	
Mount Clemens.	Clinton.	.50	1.05																														3.35	
Mount Pleasant.	Saginaw.	.94																															3.16	
Muskegon.	Muskegon.	.48	.10																														2.63	
Old Mission.	Lake.																																	
Olivet.	Kalamazoo.	.08	1.41	.02																													5.17	
Omer.	Lake.	.80																															3.02	
Onaway.	Cheboygan.																																	
Ovid.	Grand.	.24	0.71	.22																													4.37	
Owosso.	Saginaw.	.22	.02																														0.58	
Petoskey.	Rouge.	1.95																															4.02	
Plymouth.	Clinton.	.60	.90	.03																													3.56	
Pontiac.	Lake.																																	
Port Austin.	St. Clair.	.15	.78																														2.96	
Port Huron.	Muskegon.																																	
Reed City.	Au Sable.																																	
Roscommon.	Saginaw.	T.	1.20	.10																												4.30		
Saginaw.	Saginaw, W.S.	do.	05	1.45	T.																											4.03		
St. James.	do.																																2.63	
St. Johns.	Grand.																																	
St. Joseph.	St. Joseph.	.80	1.10	.30																												7.07		
Sandusky.	Lake.	1.58	.09																													3.42		
Saranac.	Grand.	17	1.17	.07																														
South Haven.	Lake.	.70	.30																															
Stanton.	Grand.	.58	.99																														4.08	
Thornville.	Lake.																																	
Traverse City.	Saginaw.																																4.08	
Vassar.	Lake.																																0.90	
Waspi.	St. Joseph.	75	1.65																													5.79		
Weberville.	Grand.	78	1.12	.13																												3.97		
West Branch.	Lake.																																	
Woodlawn.	Au Sable.	.20				</td																												

TABLE 2.—*Daily precipitation for May, 1910. District No. 4—Continued.*

TABLE 3.—*Maximum and minimum temperatures at selected stations, May, 1910. District No. 4, Lake Region.*

Date.	Wisconsin.						Michigan, Upper Peninsula.												Michigan, Lower Peninsula.						Alpena.			Battle Creek.			Cadillac.																	
	Duluth, Minn.			Florence.			Green Bay.			Milwaukee.			Chicago, Ill.			Fort Wayne, Ind.			Escanaba.			Ewen.			Houghton.			Marquette.			Sault Ste. Marie.			Alpena.			Battle Creek.			Cadillac.								
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.											
1.	61	33	70	35	65	39	55	40	54	42	80	55	50	38	67	32	64	38	68	39	62	31	52	36	66	48	37	45	37	63	44	37	45	37	60	44	37	45	37	63	44							
2.	40	30	54	32	49	38	52	35	49	40	70	58	44	34	60	16	42	32	41	32	50	37	45	37	63	44	37	45	37	63	44	37	45	37	63	44	37	45	37	63	44							
3.	43	28	48	22	49	33	46	34	45	38	58	42	44	33	49	15	44	30	39	32	46	32	50	34	55	39	32	46	32	50	32	57	31	32	46	32	57	31	32	46	32	57	31					
4.	47	33	57	18	52	32	48	36	45	40	59	31	48	31	58	22	53	27	44	30	49	32	50	32	57	31	32	46	32	57	31	32	46	32	57	31	32	46	32	57	31							
5.	64	34	61	24	58	33	53	37	50	42	61	30	51	31	64	21	60	33	50	33	53	30	57	31	32	46	32	57	31	32	46	32	57	31	32	46	32	57	31									
6.	57	37	66	28	62	36	54	39	55	43	64	32	54	39	60	23	67	35	57	45	60	34	68	34	62	32	67	34	60	32	67	34	60	32	67	34	60	32										
7.	67	44	89	38	65	41	52	43	51	46	58	35	55	38	74	31	71	40	62	46	69	38	68	38	70	37	70	38	70	37	70	38	70	37	70	38	70	37										
8.	70	46	72	34	71	45	54	44	54	50	59	40	59	40	72	34	69	42	75	50	72	35	58	38	57	42	70	37	58	38	57	42	70	37	58	38	57	42	70	37								
9.	63	41	67	44	67	48	68	63	65	47	71	46	61	44	60	37	59	46	61	48	51	43	69	43	64	43	64	43	64	43	64	43	64	43	64	43	64	43	64	43	64	43						
10.	58	35	59	40	67	42	70	47	72	53	73	43	60	37	57	35	52	40	58	36	47	36	56	36	61	36	68	38	60	36	68	38	60	36	68	38	60	36	68	38	60	36						
11.	53	28	53	27	50	36	47	41	50	43	65	44	48	32	50	23	49	36	49	34	40	37	52	31	66	41	50	30	66	41	50	30	66	41	50	30	66	41	50	30								
12.	56	31	52	27	58	35	55	39	53	43	61	32	52	33	52	25	48	34	44	34	40	34	52	33	62	32	64	32	62	32	64	32	64	32	64	32	64	32	64	32								
13.	44	35	53	28	52	32	48	39	51	41	52	32	48	34	49	31	40	31	40	32	43	32	42	31	50	30	52	31	50	30	52	31	50	30	52	31	50	30										
14.	46	32	60	21	59	31	47	36	51	41	59	32	48	26	48	15	53	25	56	28	46	31	56	28	66	28	60	28	66	28	60	28	66	28	60	28	66	28										
15.	61	42	68	32	68	42	57	42	60	46	65	31	53	43	72	42	73	41	69	45	65	35	54	31	62	30	66	30	66	30	66	30	66	30	66	30	66	30										
16.	50	41	59	41	64	47	57	46	68	52	74	43	53	44	58	50	61	47	62	46	58	58	66	51	62	51	62	51	62	51	62	51	62	51	62	51	62	51	62	51	62							
17.	54	45	65	42	61	50	59	50	62	53	63	52	52	45	58	41	50	41	56	44	55	46	59	46	63	46	63	46	63	46	63	46	63	46	63	46												
18.	66	44	70	40	73	45	75	49	70	49	75	49	66	43	64	35	60	41	56	42	45	37	62	41	60	41	60	41	60	41	60	41	60	41	60	41												
19.	49	35	78	40	77	48	78	54	77	57	79	48	53	45	79	43	50	40	68	39	54	37	52	41	75	48	74	48	75	48	74	48	75	48	74	48	75	48	74	48	75	48						
20.	59	38	73	51	74	57	65	52	68	58	77	56	60	49	71	50	67	43	75	45	65	46	71	56	71	56	71	56	71	56	71	56	71	56	71	56	71	56	71	56	71	56						
21.	47	36	64	44	61	50	60	46	71	49	82	50	56	45	59	39	52	43	50	41	61	45	72	52	81	31	75	49	75	52	75	49	75	52	75	49	75	52	75	49	75	52	75	49	75	52	75	49
22.	52	39	55	40	58	47	59	44	62	50	78	49	52	44	55	35	51	41	54	37	54	40	57	44	64	44	64	44	64	44	64	44	64	44	64	44	64	44	64	44	64	44	64	44				
23.	39	35	63	38	61	46	62	43	59	45	76	57	52	40	50	39	48	39	42	37	49	41	53	48	75	49	75	49	75	49	75	49	75	49	75	49	75	49	75	49	75	49	75	49				
24.	55	35	55	42	58	45	64	50	67	54	75	52	58	41	50	35	48	39	42	37	55	55	66	56	68	43	65	56	68	43	65	56	68	43	65	56	68	43	65	56	68	43	65	56				
25.	61	34	55	32	53	40	51	42	57	57	66	46	57	41	55	37	50	37	51	36	54	35	54	34	51	36	54	34	51	36	54	34	51	36	54	34	51	36	54	34	51	36						
26.	60	39	65	28	61	36	52	41	57	44	66	40	59	40	63	26	63	36	58	38	50	41	59	40	60	36	58	38	50	41	59	40	60	36	58	38	50	41	59	40								
27.	74	47	78	28	72	42	63	47	58	46	73	37	58	37	65	26	65	35	54	37	64	46	70	37	73	37	73	37	73	37	73	37	73	37	73	37	73	37	73	37	73	37						
28.	61	54	70	48	70	50	59	49	77	54	80	40	58	40	74	36	74	46	74	47	74	48	74	47	74	48	74	47	74	48	74	47	74	48	74	47	74	48	74	47	74	48						
29.	55	37	60	40	64	47	66	46	70	54	79	57	66	40	70	36	70	43	74	37	74	47	74	48	74	47	74	48	74	47	74	48	74	47	74	48	74	47	74	48								
30.	63	35	62	32	49	42	51	45	54	46	67	44	44	37	43	33	43	34	44	34	41	38	44	39	44	39	44	39	44	39	44	39	44	39	44	39	44	39	44	39	44	39						
31.	68	38	47	33	52	38	53	40	49	44	47	41	40	36	55	35	55	35	54	37	57	47	57	47	57	47	57	47	57	47	57	47	57	47	57	47	57	47	57	47	57	47						
Mns	56.2	45.2	58.7	42.6	64.9	41.3	60.6	47.3	66.8	47.2	63.5	48.0	64.1	46.6	61.0	46.7	59.5	45.3	61.8	43.8	62.5	45.6	62.2	45.2	62.3	44.2	61.3	40.5	56.2	45.2	58.																	